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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,191	02/13/2004	George Neuman	3691-641	7525
23117	7590	06/30/2004	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			BLACKWELL RUDASIL, GWENDOLYN A	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/777,191

Applicant(s)

NEUMAN ET AL.

Examiner

Gwendolyn A. Blackwell-Rudasill

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 43-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/13/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 43, 47, and 51-53 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-6 of copending Application No. 10/353,088. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: because the layer structure is essentially the same in addition to having the same requirement that the  $\Delta E^*$  value is no greater than 4.0 after heat treatment. The present application while claiming the metal nitride layer broadly also encompasses the more specifically claimed metal nitride of chromium nitride that is in the copending application.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending

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application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

3. Claims 43 and 53-55 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5-6, 15-16, 18, 26, 34-35, and 37-42 of U.S. Patent No. 6,524,714. Although the conflicting claims are not identical, they are not patentably distinct from each other because the broad claims of the present application would cover the patented claims as under examination disclose essentially the same layer structure and requirements as to the  $\Delta E^*$  having a value that is no greater than 4.0 after heat treatment.

4. Claims 43, 47, 51-53, and 61 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-12 of U.S. Patent No. 6,716,532. Although the conflicting claims are not identical, they are not patentably distinct from each other because the broad claims of the present application would cover the patented claims as under examination disclose essentially the same layer structure and requirements as to the  $\Delta E^*$  having a value that is no greater than 4.0 after heat treatment.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

*(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

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6. Claims 43-53, 55-67 and 69-71 are rejected under 35 U.S.C. 102(a) as being anticipated by International Patent Application Publication no. 01/21540, WO '540.

*Regarding claims 43-53, 55-67, and 69-71*

WO '540 disclose a glazing comprised of a transparent substrate with a stack of thin layers acting on solar radiation wherein the functional layer comprises a metal layer of Nb, Ta, or Zr, or said metal nitride, (abstract). The functional layer has a thickness ranging from 5-50 nm (50-500 Å), the overlayer a thickness ranging between 5-70 nm (50-700 Å), and the sublayer a thickness between 5-120 nm (50-1200 Å), (page 9, lines 5-22). The use of niobium nitride as the functional layer is of particular interest due to niobium nitride being chemically very stable, (page 4, lines 31-33). A preferred embodiment consists of a functional layer of niobium nitride with an over layer and a sublayer of silicon nitride, wherein the silicon nitride layer can also contain up to 10 wt% of aluminum, (pages 7-8, lines 31-35 and page 10, lines 3-6). The  $\Delta E^*_G$  value after heat treatment is of less than 3, especially less than 2, (page 10, lines 7-16). Example 5 has the following layer structure, (page 13, lines 5-7):

glass/Si<sub>3</sub>N<sub>4</sub> (10 nm/100 Å)/Nb (8 nm/80 Å)/TiN (5 nm/50 Å)/Si<sub>3</sub>N<sub>4</sub> (15 nm/150 Å).

Example 6 has the layer structure as follows, (page 13, lines 10-16):

glass/Si<sub>3</sub>N<sub>4</sub> (10 nm/100 Å)/NbN (10 nm/100 Å)/ Si<sub>3</sub>N<sub>4</sub> (15 nm/150 Å).

Example 6 has the following layer structure, (page 19, lines 14-20):

glass/Si<sub>3</sub>N<sub>4</sub> (10 nm/100 Å)/SiO<sub>2</sub> (40 nm/400 Å)/NbN /Si<sub>3</sub>N<sub>4</sub> (15 nm/150 Å)

wherein the thickness of the NbN layer is adjusted to obtain a particular light transmission.

Example 10 has the following layer structure:

glass/Si<sub>3</sub>N<sub>4</sub> (10 nm/100 Å)/Ta (7 nm/70 Å)/ Si<sub>3</sub>N<sub>4</sub> (20 nm/200 Å)

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which has a  $\Delta b^*_G$  value of 0.2 after heat treatment. Although Example 10 uses Ta as the functional layer, it is further disclosed that tantalum nitride provides the same advantages as using Ta, (page 20, lines 10-20).

WO '540 also disclose that the glazing can be a monolithic glazing or an insulating glazing of the type used in a double glazing, wherein the glazing has a light transmittance of 5-55%, (page 11, lines 3-17).

*Regarding claims 43-52, 55-67 and 69-71*

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed layer structure, the claimed physical properties relating to its chemical durability, transmissive  $\Delta a^*$  value, sheet resistance, pinhole diameter, and hemispherical emissivity are inherently present in the prior art. Absent an evidentiary showing to the contrary, the addition of the claimed physical properties to the claim language fails to provide patentable distinction over the prior art of record.

*Regarding claim 53*

Claim 53 is a product by process claim wherein the patentability of the product does not depend on its method of production. "If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *See MPEP 2113*. Absent an evidentiary showing to the contrary, the process limitations within claim 53 does not provide patentable distinction between the claimed invention and the prior art of record.

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7. Claims 43-66 and 69-71 are rejected under 35 U.S.C. 102(a) as being anticipated by United States Patent no. 6,059,909, Hartig et al.

*Regarding claims 43-66 and 69-71*

Hartig et al disclose an insulating glass comprised of a glass substrate with a dielectric layer formed thereon (100-400 Å), a layer of silicon nitride (20-120 Å), a partially nitrated layer of nichrome (7-50 Å), a layer of silver (75-225 Å), a partially nitrated layer of nichrome (7-30 Å), and a layer of silicon nitride 50-600 Å) wherein the coated glass substrate has a hemispherical emissivity of about 0.07 or less, and a sheet resistance of about 5.0 ohms/square or less, (column 7, lines 44-67 and column 8, lines 21-30 and column 13, lines 1-25). The definition of the chemical durability test and the requirements for determining if a sample passes the test is set forth in column 11, lines 35-44. About 6 wt% of aluminum can be added to the silicon nitride layer, (column 13, lines 38-47).

Hartig et al also disclose that the coated substrate is heat treatable, (column 14, lines 59-64). The coated substrate made according to the claimed invention passed the tests for chemical durability and mechanical durability according to the criteria set forth above, (column 18, lines 50-54).

*Regarding claims 43-52, 54-66, and 69-71*

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed layer structure, the claimed physical properties relating to its  $\Delta E^*$  values, transmissive  $\Delta a^*$  value, and hemispherical emissivity are inherently present in the prior art. Absent an evidentiary showing to the contrary, the addition of the claimed physical

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properties to the claim language fails to provide patentable distinction over the prior art of record.

*Regarding claim 53*

Claim 53 is a product by process claim wherein the patentability of the product does not depend on its method of production. "If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *See MPEP 2113*. Absent an evidentiary showing to the contrary, the process limitations within claim 53 does not provide patentable distinction between the claimed invention and the prior art of record.

8. Claims 43, 46-65, and 68-71 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 5,085,926, Iida et al.

*Regarding claims 43, 46-65, and 68-71*

Iida et al disclose a heat reflecting multilayer coated substrate, that can be used as a heat insulating glass, (column 1, lines 6-14), wherein the multilayer coating is comprised of a first layer of a metal oxide (200-1000 Å) , a second layer of a metal nitride (30-200 Å), a third layer of a metal film (30-150 Å), a fourth layer of a metal nitride (40-150 Å), a fifth layer of a metal oxide (200-1000 Å), and a sixth layer of aluminum nitride (400-2000 Å), (columns 3-5, lines 29-15). The coated substrate has a reflectance of 20% or less, (column 5, lines 30-33).

*Regarding claims 43, 46-65, and 68-71*

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed layer structure, the claimed physical properties relating to its



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chemical durability,  $\Delta E^*$  values, transmissive  $\Delta a^*$  value, reflective  $\Delta b^*_G$  value, sheet resistance, pinhole diameter, and hemispherical emissivity are inherently present in the prior art. Absent an evidentiary showing to the contrary, the addition of the claimed physical properties to the claim language fails to provide patentable distinction over the prior art of record.

*Regarding claim 53*

Claim 53 is a product by process claim wherein the patentability of the product does not depend on its method of production. "If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *See MPEP 2113*. Absent an evidentiary showing to the contrary, the process limitations within claim 53 does not provide patentable distinction between the claimed invention and the prior art of record.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gwendolyn A. Blackwell-Rudasill

Examiner

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gbr

6/25/04